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ABSTRACT

An ethnolinguistic study of eight children (four girls, four boys) in an English nursery school is presented. The study examined the language and social behavior of the 3-year-old children during their initial adjustment to a school environment. All were third-generation British born to families of Pakistani origin, and spoke Mirpuri, vernacular Urdu-Punjabi, and English. They were observed on their first day in school and again 3 months later. Data were drawn from recordings of naturally-occurring language and contextual information on behavior. Case studies of one girl and one boy are presented here. Using social network analysis, the ways in which these linguistic minority students established contact with each other and other children are demonstrated. Two network types emerged: loose pupil networks and dense friendship networks. The former are characterized by the presence of teachers, playing an influential role in the composition of the cluster and the activities and behaviors of participants. As the term progressed, key individuals emerged from the pupil network and moved to form dense friendship networks. The groups' memberships influenced the bilingual children's social and language behavior in this setting, suggesting that children at this age can recognize markers of ethnicity. (MSE)

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School Ties:
A social network analysis of friendships in a multilingual kindergarten

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School Ties:
A social network analysis of friendships in a multilingual kindergarten

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The Soul selects her own Society Emily Dickinson Poem No. 303

Abstract

This paper presents a micro level analysis of data from the Box Hill Nursery Project, an ethnolinguistic study carried out in the north-east of England (Thompson, 1994 & 1995), into the language and social behaviour of a group of eight children, four girls and four boys, during their first term in a nursery school, during the period of their enculturation into formal education. The informants, aged between three years and four months (3.4) and three years and seven months (3.7), are third generation British born to families of Pakistani origin. They are Moslems from the Mirpur region. They speak Mirpuri, vernacular Urdu-Panjabi, and English.

The children were observed on their first day in the nursery and then again three months later, at the end of their first term. Data were collected from two complementary sources. Discourse data were gathered using audio-tape recordings of the children's naturally occurring language. These were complemented by *thick* (Geertz, 1975) contextual data of the children's behaviour. The experience of two children (one girl, Shamaila and one boy, Ishtiaq) from the study will be presented as case studies. Using social network analysis as a research method, data will be presented to demonstrate the ways in which these linguistic minority pupils established contact with each other (and other children in the nursery) and made friends during their first term in the nursery school. First day contacts will be compared with end of term contacts to demonstrate the ways in which the individual's ties become established as the term progresses. Analysis will trace the emergence of two types of networks, *pupil networks* and *friendship networks*. It will be suggested

Haste (1987) who claim the social dimension as important for young children as a central factor in their learning processes.

There are specific reasons that make social network analysis a particularly appropriate research method for observing these young bilingual children. Milroy (1980) suggests that the network concept is a principle capable of universal application and is hence less ethnocentric than other descriptions of social groupings for example, class or caste. This reinforces it as a research method which is particularly appropriate for describing the social behaviour of a group (or community) when the researcher is not a member of that community. It also makes it suitable for the study of clearly definable communities, like the major linguistic and ethnic minority communities now established and permanently settled in Britain. A fundamental postulate of network analysis is that individuals create personal communities which provide them with a meaningful framework for solving the problems of their day-to-day existence (Mitchell, 1989:74). This focus makes social network analysis useful for observing the enculturation process as experienced by individuals in new social settings.

To date, two types of network ties have been identified in the literature. Boissevain (1974) describes and exemplifies procedures used to analyse personal networks in terms of *dense* networks or *multiplex* ties. These correspond approximately to the *first order zones* described by Barnes (1954). These dense, first order zone ties are the links through which individuals make direct, personal contacts. By comparison with these dense, first order zones, the multiplex, second order zones are more loosely formed. They typically involve larger numbers of individuals; include fewer personal contacts, and are usually made for a wide variety of functional purposes for example, doing the shopping, negotiating transactions and getting things done.

Since social network analysis is an established paradigm in sociolinguistics and anthropology there are a number of ways already established for analysing social

that the presence of adults (teachers and bilingual classroom assistants), exert an influence on the establishment and consolidation of these networks and that the children's developing ethnicity can be found with in these emerging networks. The paper begins with an overview of social network analysis as a theoretical framework for data analysis.

The Concept of Social Network Analysis as a Research Method

Social network analysis is an established paradigm within sociolinguistics and anthropology. Its origins can be found in the work of Barnes (1954) who used social network analysis to describe the contacts between the inhabitants of the Norwegian village of Bremnes. Barnes felt that a great deal of social behaviour could not be accounted for by concepts based on status, territorial location or economic activity alone. Social networks were later defined by Milroy (1980:174) as 'the informal social relationships contracted by an individual' and by Le Page and Tabouret-Keller (1985:116) as 'those structural complexes within communities made up of chains and criss-crossings of friendship, relationship and acquaintanceship to which each of us belong'.

The term social network refers therefore to the informal social relationships contracted by an individual. A social network may be regarded as a boundless web of ties which reaches out through a whole community, linking people to one another. The individual remains the locus of the network. Tajfel (1981:135) suggests that 'social categorisation is a cognitive tool which allows individuals to define and organise their social world into meaningful units'. Individuals use social categories to order their social environment and hence reduce the complexities of their experiences. It is a means by which individuals make sense of the world around them and their experiences within it. This view corresponds with a general view of learning held by others, for example, social psychologists including Bruner (1986) and Bruner &

network ties. The analysis presented here rejects the complex six point numerical scale used by Milroy (1980) in favour of a much more straightforward measure used by Gal (1978), based on the actual number of contacts a speaker makes within a given observation period. This approach finds support from other sources, for example, Gumperz (1976:14) who points out that personal network structure is influenced by a very large number of factors and that it is very unlikely that any investigation will be able to identify all of these, let alone measure them. His view suggests that the numerical approach favoured by Milroy (1980) can only be partial.

An Analysis of the Social Networks in Box Hill Nursery

This micro level analysis is a description of the contacts or ties formed by linguistic minority children during their first days in the nursery and the ways in which these ties become established during the first term in the nursery school. A previous time-on-task analysis of these children's activities (Thompson, 1993) reveals that bilingual pupils spend significantly longer periods of time engaged in some learning tasks than on others. The aim of the social network analysis is in part to understand this observed behaviour more fully and also to observe the ways in which the children become socialised into the new social context in which they find themselves.

Analysis of the data has been carried out in the tradition of grounded theory (Glaser & Strauss, 1967). Recurring patterns of behaviour (or codes) have been identified from close scrutiny of the data from two of the children, a girl Shamaila and a boy Ishtiaq. These codes have been used as the analytical framework for the data from all eight informants. Case studies of these two informants will be presented to exemplify the patterns of observed behaviour. Analysis focuses on two aspects:

i) the individuals who are in close proximity to the child being observed, ie those people (adults and children) who are nearby and available for interaction. These are termed *potential participants* and

ii) those individuals with whom interaction(s) are observed and recorded. These individuals have been selected from the group of potential participants for interaction. They are therefore regarded as *preferred participants*.

Previous studies have established conventions for demonstrating social network (c.f. Milroy 1980:48 & 1980:58). For this study, an alternative method of diagrammatic representation has been devised in an attempt to illustrate more clearly, the membership of the types of networks identified. By presenting the data in this new way it is also possible to illustrate the (small) degree of movement, by individuals, between the networks. This movement helps to show the ways in which new contacts are made and how they are developed in the new social situation of the nursery classroom.

The Nursery School Setting

The structure of the nursery setting where the study was undertaken is significant. The large open plan room is divided into a number of learning domains, each containing learning activities designed to address a specific aspect of social, cognitive, physical, moral or aesthetic development. Each learning domain is delineated by the positioning of furniture and 1.2 metre high screens, thus allowing supervising adults an overview of the room while simultaneously providing maximum seclusion to the children inside the individual domains. This carefully planned learning environment remained unchanged throughout the four month observation period with one exception. During the last four weeks of the term, Domains 22 and 23 became one domain containing a Christmas Tree which the children helped to decorate. The educational rationale underpinning the layout design was to encourage learner autonomy. Pupils were expected to select their own learning activity and to be responsible for the collection and storage of all learning materials required for their activities. Materials were available within each domain, stored in labelled units. The domains were numbered in the order in which the child

would arrive at them after entering the nursery, hence domain one is the children's cloakroom. The domains were:

Domain 1	Children's Cloakroom
Domain 2	Office
Domain 3	Library
Domain 4	Staff Cloakroom
Domain 5	Home Corner
Domain 6	Books
Domain 7	Dry Sand
Domain 8	Outside Play Area
Domain 9	Paints
Domain 10	Craft, Design and Technology Bench (CDT)
Domain 11	Junk Table
Domain 12	Wet Sand
Domain 13	Clay
Domain 14	Water Area
Domain 15	Washbasins
Domain 16	Sink
Domain 17	WCs
Domain 18	Kitchen
Domain 19	Food
Domain 20	Staff Kitchen
Domain 21	Construction Area
Domain 22	Train Set
Domain 23	Music
Domain 24	Drawing Table
Domain 25	Games
Domain 26	Book Corner
Domain 27	Building Bricks
Domain 28	Corridor Areas

Diagrammatic representations of the nursery setting can be found in Thompson (1993 & 1995).

Analysis begins with a description of Ishtiaq's social networks. Figure 1 shows a diagrammatic representation of Ishtiaq's first encounters in the nursery school.

Ishtiaq's Social Networks

Ishtiaq is a boy aged 4.7 years at the time of the first day observation. Figure 1 presents a diagram of his first activity in the nursery school.

INSERT Figure 1 A Social Network Analysis for Ishtiaq's first encounter in Box Hill Nursery

For each activity two social networks are shown. The inner circle corresponds to Boissevain's (1974) multiples ties and Barnes' (1954) first order zones. The informant being observed, Ishtiaq himself, is represented at the centre of this network by the symbol II. The outer circle corresponds to what Boissevain (1974) calls multiplex ties and Barnes (1954) calls second order zones.

The inner circle will be termed the *dense network* and the outer circle, the *loose network*. The loose network represents individuals, pupils and teachers, who are present in or near a particular learning domain. They represent a group of *potential participants*, defined as those individuals who are present and potentially available to participate in activities and/or interactions. They are available to initiate interactions with Ishtiaq and/or to respond to his.

In the social network diagrams, girl participants are represented by the symbol ◯ and boys by □. Individual children are identified by their initials, for example II is Ishtiaq. Teachers (and other adults) are represented by triangular symbols, △, numbered 1 to 7. Bilingual teachers are shown as ▲. Not all are necessarily present in the nursery on each day of observation.

Figure 2 is the social network analysis for Ishtiaq's encounters during his second learning activity on his first day in the nursery.

INSERT Figure 2 A Social Network Analysis of Ishtiaq's second activity in Box Hill Nursery

The inner circle represents the dense network of participants with whom verbal interaction(s) are recorded on the audio tapes and/or non-verbal interactions recorded on the observation schedule. These individuals (SA) [MI] are drawn into the dense network from the loose network of potential participants either because they initiate verbal or non-verbal interaction with Ishtiaq or because he initiates (or attempts to initiate) interaction with them. To be included in this dense network individuals have to interact verbally or non-verbally with the informant.

Figure 3 presents the analyses for each of the learning activities in which Ishtiaq is engaged during his first hour in the nursery. Analysis suggests the emergence of two types of networks: loose outer networks and dense inner networks.

Loose Pupil Networks

The loose networks will be termed *pupil networks*. Pupils come together in these pupil networks for specific group activities which are often teacher led. Examples of pupil networks include occasions when all of the children in the nursery come together in a joint activity. Story time and singing activities are just two examples. However, pupil networks are not always large groupings. The painting activity with Teacher 1 (Figure 3 Activity 5) and playing in the pretend kitchen (Figure 3 Activity 1) are just two examples of smaller groupings of pupil networks. All of the teachers feature as key participants in the networks of the children. However, they have not been included in the dense networks because the nature of the child-teacher interactions differ in a number of ways from the child-child interactions. It can be seen from the data from all informants that the teachers play a significant role in maintaining interest in a learning activity.

In the pupil network, individuals participate in the common learning activity, for example, painting, making a calendar, listening to a story etc. They participate as pupils. Characteristic features of this pupil network include the nature of the recorded interactions, which usually reflect their participation in the learning activity in their role as pupils. Interactions are made for functional rather than social purposes. The following extracts of interaction between members of a pupil network illustrates this functional interaction:

Shamaila: tidy up
Kamran: brown, move your hand

The topic of their exchange relates to their participation in the learning activity as pupils. They talk about the activity in which they are engaged. They interact for the purpose of getting things done.

These interactions are interesting in their own right as evidence of interaction between children within the pupil network. However, they are also of further significance. They are evidence of the individual's developing communicative competence. They demonstrate the ways in which the children are learning to behave appropriately as pupils. They are also the initial contacts which frequently form the basis of more enduring contacts between individuals. For example, Ishtiaq's friendship ties with Mushtifaq and Shazia are begun in the very first hour in the nursery. Initial ties were formed through participation as pupils in a teacher directed learning activity (Figure 3 Activity 1) in the pretend kitchen (Domain 18). During the first hour in the nursery, it can be seen from Figure 3 that these contacts are maintained as the three children (Ishtiaq, Mushtifaq and Shazia) move from one activity to another together in a small group. In this way it can be seen that children come into initial contact as pupils, and these initial contacts with selected individuals become consolidated into friendship ties over a period of time.

The focus of the pupil network groupings is frequently a teaching function. It can be seen that these groupings are strongly teacher influenced. On arrival in the nursery the first encounter for most of the pupils is with a teacher, as the following extract from the transcripts demonstrate:

Teacher 5: what a pretty coat
Biling T7: come and leave it here, is that alright like that
Teacher 3: Shamaila, hang your coat up please, you put this one on

From these initial greetings, the children are initiated into the routines of the nursery with the person who brings them to school. They are shown where to hang their coat, how to register and collect their name card from a board, as well as a number of other activities that they are expected to perform on their arrival in the nursery each day. Sometimes engagement in these activities leads to encounters with other pupils or teachers. Teachers are alert to the arrival of newcomers and are constantly on the look out for ways of involving them in ongoing activities.

Teachers deliberately select individuals for inclusion in a particular activity, as the following extracts from the transcripts demonstrate:

Biling T4: sit down here Natalie, you sit down here

Teacher 1 : (to Rabila) come on let's go for a walk

Teacher 3: come on you play as well, come on Kamran, ali play together

There is a second type of grouping observed, a dense network.

Dense Friendship Networks

Children's membership of the dense friendship network is defined in terms of three factors:

i) the number of interactions recorded between individuals

ii) the initiator of the interaction

iii) the topic of the exchange.

Figure 4 shows the social network analysis of Ishtiaq at the end of the first term. The recurring presence of the same two participants, Mushtifaq [MI] and a girl Shazia (SA) confirm their position in Ishtiaq's dense friendship network. They have moved from the loose pupil network to the dense network of close ties. They have become friends. The friendship network comprises close ties with only a small number of preferred participants. These are the individuals with whom interaction is preferred and even sought. The movement from the pupil network to the friendship network occurs over the first term in the nursery. However, it can be seen from the data that the origins of the dense friendship network can actually be traced back to the very first hour in the nursery, when the teacher brings these children together, in a group as pupils on a joint learning activity.

INSERT Figures 3 & 4

Not all ties progress from the loose pupil network to the dense friendship network. It can therefore be inferred that a selection process is operating. Individuals select, preferred participants from the loose pupil network for inclusion in their dense friendship network. This pattern of an emerging dense friendship network comprising selected individuals from the loose pupil network, can be observed across the data from all of the eight informants. The significance of this selection (ie their choices) will become apparent when the overview of the data from all of the eight informants is presented in Table 7 in the form of a table of preferred participants.

Shamaila's Social Networks

Shamaila, a girl aged 3.5 years on the first day of observation is the second informant to be presented in detail. Figure 5 presents a social network analysis of those present during the activities in which Shamaila was engaged during her first hour in school.

Closer examination of the individuals in the dense network reveals the recurring presence of specific individuals Sabia (SH) and Sofees [SM]. They form a dense network. This dense network comprises boy and girl peers and teachers. The presence of the adults and peers can be explained in different ways. Upon arrival at school Shamaila encounters a group of three children, all boys Geoffrey [G], Michael [M] and Sofees [SM] and a monolingual teacher △1. The teacher is the only one with whom interaction is recorded and, not surprisingly, the interaction is teacher initiated and English is the language of the interaction:

> Teacher: Hello Shamaila, hang your coat up please and put this one on (handing her a protective overall)
>
> First Day Activity 1

At this point, attention is drawn to the peers present in the dense networks. Sofees [SM] and Shamaila (Sh) move to the Dry Sand domain together to work with another monolingual teacher △5 on a structured play activity which lasts for seven minutes. When they have completed this task they leave together. In the corridor (Activity 3) Shamaila meets Sabia (SH). Here again we see the emergence of a loose network which soon becomes established as a dense network. From the first day these two children, Sofees and Sabia, are frequently found in Shamaila's dense network. This emerging network begins within the first hour at school and is consolidated over the first term. This is presented in Figure 5 the social network analyses for Shamaila's activities at the end of her first term in the nursery school.

A similar pattern can be observed for all of the eight informants in the study.

INSERT FIGURES 5 & 6

One of the stated aims of the Box Hill Nursery Study is to observe and record the process of enculturation which the pupils experience as they begin formal education in the nursery as a linguistic minority group. Enculturation has been described as 'learning one's place within the group, learning one's rights and responsibilities, it is the process of learning the whole complex of meanings that defines the social reality of the group and the rules which allow a newcomer to function' (Lubeck, 1985:13). Social network analysis is therefore important for this study in two ways. Firstly, it provides data on individual's pattern of friendship and other ties, and secondly, it provides an analysis of the social context in which these interactions are taking place. It provides insights into the ways in which linguistic minority pupils are learning their roles and responsibilities as pupils within the classroom. It helps to demonstrate their participation within the complex organisation of the nursery setting. To become accepted and become established within the nursery, newcomers have to learn new ways of behaving and being. If they do not, then there is the possibility that they will not be accepted by peers and teachers as a member of the new community. children from minority cultures and linguistic communities face a particular challenge when they enter school in the dominant language of the society. Analysis of the data from all eight children observed confirms this pattern of preferred participants. Figure 7 presents an overview of the emerging social networks for each of the eight informants.

INSERT Figure 7

There are a number of observations to be made about the composition of these networks. Two types of social networks have been identified: the children's dense self-selected ties and the loose, teacher-influenced groupings. The inner dense

network of preferred participants is termed the *friendship network*. The friendship network comprises a very select number of preferred participants, usually only one or two individuals. Imran is the only informant to select three preferred participants for his friendship network. Secondly, there is strong evidence to suggest gender specific selection of preferred participants for the friendship network. This is the case for both boy and girl informants. However, the selection of same sex preferred participants only applies when the friendship networks comprises one key participant, for example, Mushtifaq (MI) is the key participant in Ishtiaq's (II) dense network; Imran (IB) in Kamran's (KH); Sabia (ZH) in Rabila's (RN); and Sumera (SK) in Sabia's (ZH). So it can be seen that when the friendship network comprises only one key participant, then that individual is always the same sex. However, when the friendship networks comprise two (or less usually, three) members, then the same sex option is different. These larger friendship networks are mixed and include both boys and girls as preferred participants. This is the case for three of the informants: Imran (IB) with Azia (AB), Kamran (KH) and Yassair (YA) forming his friendship network; Shamaila (Sh) preferring Sofees (SM) and Sabia (ZH) in hers; and Sofees (SM) with Shamaila (Sh) and Yassair (YA).

Inclusion in a friendship network is not automatically a reciprocal arrangement between children. For example, Rabila (RN) is a key member of Shamaila's (Sh) friendship network while Shamaila's (Sh) only features in Rabila's (RN) loose, outer networks. This could be accounted for by suggesting that the friendship bond is asymmetrical, stronger on one side than the other. These differences in the roles played by these girls in each other's network system is, in part, determined by the nature and topic of the exchanges that take place between them. Shamaila and Rabila assume different participant roles in each other's networks. However, it should be noted that Rabila is not Shamaila's key participant. She is only one of the small group of preferred participants. There is another member of Shamaila's friendship network

with whom she has formed a stronger bond (based on the number of interactions), a boy, Yassair (YA).

There are examples from the data of reciprocal inclusion in friendship networks. For example, Imran (IB) features in Kamran's (KH) friendship network as the key participant and Kamran (KH) features as one of the three key participants in Imran's (IB) friendship network. There is no example of two children selecting only each other as sole preferred participant. Further, this group of observed children do make contacts with other children who are not in the sample group. However, there is a striking pattern that can be observed across the data sets from each of the informants, namely, the preferred participants who form the dense ties of the friendship networks are exclusively same ethnic group peers.

The significance of the individuals who form the friendship networks is that they are predominantly members of the same ethnic group of Mirpuri-Panjabi speakers. They carry a number of emblems of their ethnicity: their style of dress (shalwa-kameez, for the girls); jewellery (nose pins, earrings and glass bangles); and hairstyle. They are all Mirpuri speakers and so they also share a linguistic repertoire which includes both Mirpuri-Panjabi and English, to varying degrees of competence. These markers of ethnicity have been identified by Le Page & Tabouret-Keller (1985) as significant in helping groups and individuals to identify themselves and each other as same group members. Le Page & Tabouret-Keller (1982) suggest the following criteria as a basis for individual's self-allocation to an ethnic group:

- Physical features
- Provenance
- Language
- Family descent or race
- Nationality
- Culture

- Traditions
- Religion

It is suggested therefore, that these markers of ethnic identity may act as attraction factors for newly arrived pupils. These features may help individual children to identify each other, within the new social setting of the nursery, and to actively seek ways by which to establish contact with individuals whom they perceives as like them. Again, this is a recurrent pattern of behaviour across all of the children in the study.

Based on these observations from the Box Hill Nursery Project, it is suggested that there is mutual recognition of at least some of the characteristic features of ethnic identity (as described by Le Page & Tabouret-Keller, 1985) in children as young as three years. This concurs with the findings of Milner (1984) who suggests that children at the ages of three and four years can identify members of their own ethnic group, distinguishing them from others groups. It is clear that the informants in the study are making choices. The children are making friends and forming friendship networks based on a selection from a wider group of children. The emerging pattern of preferred participants in the friendship networks suggests that these choices are not random. Deliberate choices are being made. Specific individuals are identified for contact. Once identified, these selected individuals may become the preferred participants for joint activities. As the term progresses these contacts become consolidated as friendship ties.

It is suggested that these preferred participants, whose company is sought and with whom interaction is frequently observed, correspond to Halliday's (1978) *coterie of significant* others. That is, a small group with whom language and appropriate social behaviour is learned. The selection of this group of preferred participants begins from the very first hours in school and is consolidated over time. However, the extent to

which individual children are aware of their choices, or are conscious of making them, remains a matter for further speculation (and further investigation).

From the data it can be seen that clear friendship networks emerge and that while these are different for each child, there are common features. It is suggested that these dense networks of preferred participants or friendship networks, have an influential role to play in the developing communicative competence of newcomers to the nursery. It should also be noted that members of the friendship network are always present with the informant during periods of sustained time on task. It can be said therefore, that the presence of some individuals act as an attraction factor in sustaining interest in particular activities. Further, it is suggested that there is a social dimension to classroom activities that can (in part) account for children spending sustained periods of time on selected learning activities.

Characteristic Features of the Dense Friendship Networks

A number of key characteristic features emerge from the network analyses of the dense friendship networks.

1. The friendship network is based on same ethnic groupings. All are Mirpuri-Panjabi speakers of ethnic Pakistani background. They carry the physical emblems of their ethnic Pakistani background previously described, as well as intrinsic features such as skin and eye colour. These features have been identified by Le Page & Tabouret-Keller (1982 & 1985) as distinguishing markers of ethnic identity. they have a dual function. Firstly, they help individuals to recognise each other. Secondly, they confirm and reinforce group boundaries. These findings suggest that these young children recognise these features of their own ethnicity and form friendships on Le Page's (1985) distinction of 'same as each other' rather than 'different from each other' criteria. The children select their friends from

those who are like themselves rather than from those who are different from themselves.

2. The friendship networks comprise only small numbers of significant others Kamran, Rabila and Sabia all have only one key participant in their friendship network. Shamaila, Shazad, Ishtiaq and Sofees all have two and only one informant Imran, has three.

3. When the friendship network comprises only one person, this preferred participant is termed the *key participant*. There are only three children, Kamran, Rabila and Sabia who have only one key participant. Key participants are always the same sex. For example, Kamran's key participant is Imran; Rabila's key participant is Sabia and Sabia's key participant is Sumera.

4. When the friendship grouping comprises two or more individuals, then both girls and boys are found in the network. This suggests that the same sex friendship groupings reported by other studies (Roffey et al., 1994) are perhaps learned behaviour that occurs as children get older. It may also suggest that the social structures of the school and wider community influence an individual's behaviour towards same sex friendships.

5. Children spend longer, more sustained periods of time on task, engaged in learning activities when they are working with members of their friendship network.

6. The language of the interactions within the friendship network is predominantly (but not exclusively) Mirpuri-Panjabi, the language spoken by these children in their homes. It is also one of the main community languages spoken in the region and within Britain.

7. Teachers (and other adults) play an instrumental role in making initial introductions between children. These are usually made on the basis of groupings for teaching purposes when the children come together as pupils on a learning task. Once these contacts have become established, teachers continue to play an important role in allowing emerging ties to flourish. They do this by providing structured opportunities for the consolidation of these ties and initiation of others.

8. Friendship Networks are not necessarily mutual or reciprocal. For example, Shamaila is the key participant of Rabila's friendship network but Rabila only features in Shamaila's loose pupil network. Friendship bonds therefore can be asymmetrical, stronger on one side than the other. The participant roles assumed in each other's network is determined by the nature of the exchanges that takes place between the two individuals or the purpose(s) of the communications between individuals. Language use within the networks plays an important role in the consolidation and reinforcement of the ties. this is a feature that deserves further research.

9. There is no observed situation where two individuals only select each other as the sole key participant. For example, Imran and Kamran both feature in each other's network but not as the sole tie. Imran features as the sole participant in Kamran's network but Kamran features as one of three participants in Imran's friendship network. This observation concurs with Roffey et al. (1994:02) who suggest true reciprocity as a feature of pre-schooler friendships is not usual.

10. These findings support Dunn's (1993:117) suggestion that children's relationships are dynamic. It has been seen that the friendship networks emerge and become consolidated during the children's first term in school. Further studies are required to determine the rate and extent to which they change in detail. as the children get

older and their experiences of school and other social situations broaden. Dunn further suggests that the development of social understanding can be influenced by the quality of close relationships. However, further studies are needed to determine the extent to which this could be achieved through introductions with other children who are outside the same ethnic group and the role that adults and teachers can play in encouraging inter-ethnic groupings.

There is support from social psychologists (c.f. Bruner, 1986 & Bruner & Haste, 1987) to suggest that children learn through social interaction with others. This is a view supported by systemic linguists (c.f. Halliday, 1975) who suggest that language plays an instrumental role in this process. The findings from the Box Hill Nursery Project support the notion of social networks that are dynamic. Analysis demonstrates the ways in which individuals identify each other during their first day in the nursery and how these initial contacts are developed during the first term to become consolidated social networks. Further studies are needed to ascertain the durability of these networks, to investigate how they change, and to offer possible reasons for this evolution.

In summary it can be said that the children in Box Hill Nursery make friends through the formation of dense networks and teachers influence pupils through the composition of the loose networks.

Contextualising Social Network Analysis

It is important to establish that while individual personal networks can be described in detail they can only be fully understood when contextualised within a broader social framework. Bronfenbrenner (1989:226-230) suggests that the patterns of social interchange carry an inherent value system that is embedded in an ecological paradigm. He suggests that social contexts and their inherent value system can exert influence on individuals and the learning that takes place within these contexts.

Implications of the Findings

A number of attraction factors (as previously described by Le Page & Tabouret-Keller, 1985) have been identified. These help to illuminate further understanding of the time on task phenomena and to clarify why some children spend more sustained periods of time on some learning activities. Two suggestions are offered. Firstly, that time on task is not *per se* necessarily the only indicator of the validity of a learning activity. Secondly, that the cognitive complexity of the learning activity is not the only reason for a child to spend a sustained period of time on task. It is suggested that there is a social dimension to learning activities. This social dimension, or interactions with teacher and peers, is a plausible explanatory factor for individuals spending sustained periods of time on task.

The establishment and consolidation of social networks is also an important influence on bilingual children's enculturation into mainstream education. Social network analysis offers insights which illuminate this process. Heller (1989:180) claims that 'the basis of ethnicity can be found in the social networks within which an individual forms relationships and carries out activities'. If so, it is important that teachers of young children appreciate and understand the significance of self-selected friendship groupings for young learners, particularly those who are bilingual, bicultural from ethnic minority communities. These children frequently find themselves a minorities in schools. This may have an isolating effect on the young learners which may in the immediate and long term, impede social and cognitive learning.

In summary, the membership of emerging friendship and pupil networks can be seen as significant in accounting for linguistic minority pupils' social and linguistic behaviour in the nursery setting. Further, the establishment and consolidation of social networks is an influence on the children's enculturation into mainstream education. Social network analysis offers insights that illuminate these processes. Roffey et al. (1994:21) reinforce this view when they state that: 'an important part

of developing a sense of self is identifying with the groups to which we feel we belong'.

Summary

Analysis identifies the emergence of two types of social networks; *loose pupil networks* and *dense friendship networks*. The former are characterised by the presence of the teachers who can be seen to play an influential role in the composition of the cluster, and the activities and behaviour of individuals that takes place within grouping. As the term progresses, key individuals emerge from the pupil network an move to form dense friendship networks. These can be characterised by the dominance of same ethnic group peers. The membership of these emerging pupil and friendship networks are seen to be significant influences in accounting for bilingual children's social and language behaviour in the school setting. The findings suggest that children as young as three years can recognise markers of ethnicity. The children are aware of those who belong to the same ethnic group as themselves and those who do not.

The findings of this study are of particular significance to the teachers of young ethnic minority children. It is suggested that classroom organisation and pupil groupings can influence individual learner's school performance. This is a view supported by Clark (1988) who suggests that the pairings of bilingual children in Tough's (1977) study of language assessment influenced the children's language performance. It is suggested therefore that the grouping (or organisation) of children for classroom teaching and assessment activities may lead some pupils to underperform. Educational underachievement is a recurring theme in discussions of the academic performance of pupils from the linguistic and ethnic minority groups (c.f. The Swann Report, DES 1975; and Troyna, 1991). The findings of this study will therefore be of interest to educational planners and teachers of ethnic minority pupils.

Acknowledgements

This work would not have been possible without the support of the University of Durham Research and Initiatives Committee; Durham University School of Education Research & Publications Committee; Dr. David Toll; and the children and teachers of Box Hill Nursery. My sincere thanks to you all.

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References

Barnes, J. A. (1954) 'Class and Committees in a Norwegian Island Parish' in ***Human Relations,*** Vol. 7. No. 1.

Boissevain, J. (1974) ***Friends of Friends: Networks, Manipulators and Coalitions,*** Oxford: Basil Blackwell.

Bronfenbrenner, Urie (1979) ***The Ecology of Human Development,*** Cambridge, Mass: Harvard University Press.

Bruner, J. (1986) ***Actual Minds, Possible Worlds,*** Cambridge, Mass: Harvard.

Bruner, J. & Haste, H. (Eds.) (1987) ***Making Sense: The Child's Construction of the World,*** London: Methuen.

Clark, M. M. (1988) ***Children Under Five: Education Research and Evidence,*** New York: Gordon & Breach.

DES (1985) ***The Swann Report, Education For All, the Report of the Commission of Inquiry into the Education of Children from Ethnic Minority Groups,*** London: HMSO.

Descombe, M. et al (1993) 'Ethnicity and Friendship: The Contrast Between Sociometric Research and Fieldwork Observations in Primary School Classroom,' in P. Woods & M. Hammersley (eds) ***Gender & Ethnicity in Schools***, London & New York: Routledge.

Dunn, J. (1993) ***Young Children's Close Relationships,*** Newbury Park: Sage Publication.

Gal, S. (1979) ***Language Shift: Social determinants of linguistic change in bilingual Austria***, New York: Academic Press.

Geertz, C. (1975) ***The Interpretation of Cultures,*** London: Hutchinson.

Glaser, B. and Strauss, A.L. (1967) ***The Discovery of Grounded Theory: Strategies for Qualitative Research***, Chicago: Aldive.

Gumperz, J. J. (1976) ***Social Network and Language Shift, Working Paper 46,*** Language Behaviour Research Laboratory, Berkeley.

Halliday, M. A. K. (1975) ***Learning How to Mean: Explorations in the Development of Language,*** London: Edward Arnold.

Halliday, M. A. K. (1978) ***Language as Social Semiotic,*** London: Edward Arnold.

Le Page, R.B. (1978/1980) 'Projection, focusing, diffusion or steps towards a sociolinguistic theory of language, illustrated from the sociolinguistic survey of multilingual communities, Stage I: Cayo District, Belize and Stage II: St. Lucia', School of Education, St. Augustine, Trinidad: Society for Caribbean Linguistics, Occasional Paper No. 9. Reprinted in (1980) ***York Papers in Linguistics***, No. 9.

Le Page, R. B. & Tabouret-Keller, A. (1985) ***Acts of Identity,*** Cambridge: Cambridge University Press.

Lubeck, Sally (1985) ***Sandbox Society,*** Lewes: Falmer Press.

Milner, D. (1984) ***Children and Race 10 Years On,*** London: Ward Lock.

Milroy, L. (1980) ***Language and Social Networks,*** Oxford: Basil Blackwell.

Mitchell, J. Clyde (Ed) (1989) ***Social Networks in Urban Situations,*** Manchester: Manchester University Press.

Roffey, S., Tarrant, T., & Majors, K. (1994) ***Young Friends,*** London: Cassell.

Tajfel, H. (Ed) (1981) ***Human Groups and Social Categories,*** Cambridge: Cambridge University Press.

Thompson, L. (1993) Time Well Spent or Du temps perdu? ***European Early Childhood Education Research Journal***, Vol. 1, No. 2, pp.39-50.

Thompson, L. (1994) The Cleveland Project: A Study of Bilingual Children in a Nursery, ***Journal of Multilingual & Multicultural Development,*** Vol. 15, Nos. 2/3.

Thompson, L. (1995) ***Bilingual Children Entering Pre-School Education: An Analysis of Social and Linguistic Processes,*** PhD Thesis, University of Durham.

Tough, J. (1977) ***Talking and Learning: A Guide to Fostering Communication Skills in Nursery and Infant Schools,*** London: Ward Lock.

Troyna, B. (1991) 'Underachievers of Underrated? The Experience of Pupils of South Asian Origin in a Secondary School', ***British Educational Research Journal,*** Vol. 17. pp 361-376.

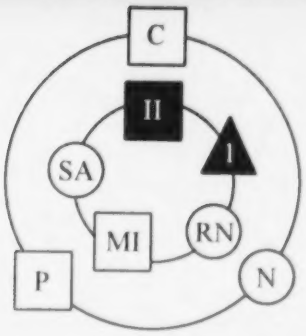


Figure 1 A Social Network Analysis for Ishtiaq's first encounter in Box Hill Nursery

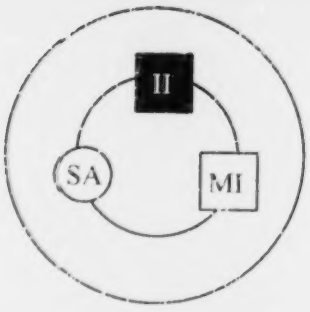
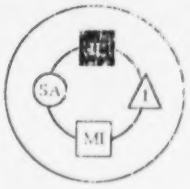
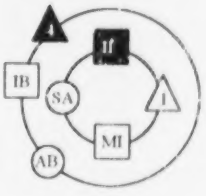
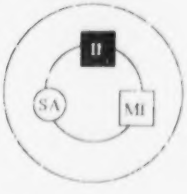
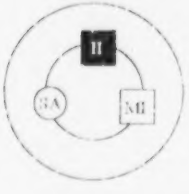
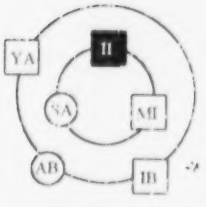
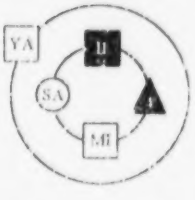


Figure 2 A Social Network Analysis of Ishtiaq's second activity in Box Hill Nursery

ISHTIAQ	End of term

Activity 1	Domain 6 Books 25 minutes		MI Mushtifaq SA Shazia
Activity 2	Domain 28 Corridor 2 minutes		AB Azia IB Imran
Activity 3	Domain 28 Corridor 6 minutes		
Activity 4	Domain 5 Home Corner 8 minutes		
Activity 5	Domain 18 Pretend Kitchen 18 minutes		YA Yassar
Activity 6	Domain 11 Junk Table 15 minutes		

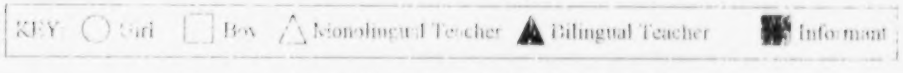
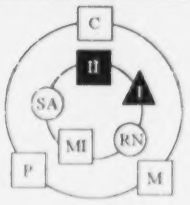
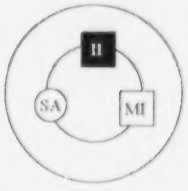
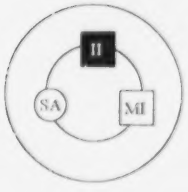
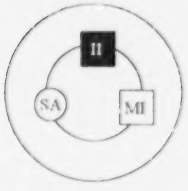
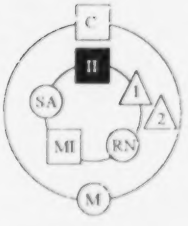
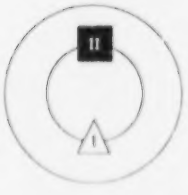
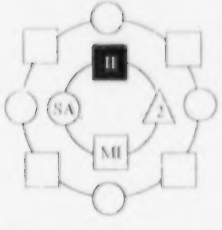


Figure 4 A Social Network Analysis for Ishtiaq at the end of the first term in Box Hill Nursery

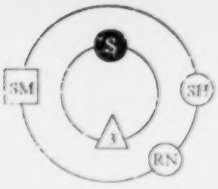
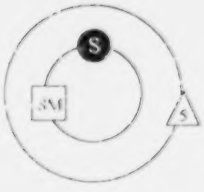
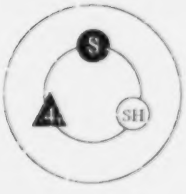
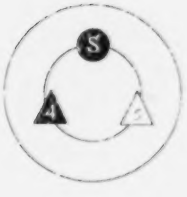
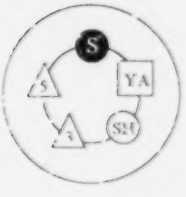
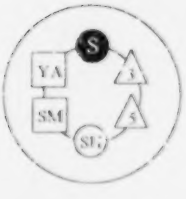
ISHTIAQ **First day**

Activity 1	Domain 18 Pretend Kitchen 20 minutes	
Activity 2	Domain 12 Wet Sand	
Activity 3	Domain 14 Water Area	
Activity 4	Domain 8 Outside Play Area	
Activity 5	Domain 9 Paints 15 minutes	
Activity 6	Domain 15 Washbasins	
Activity 7	Domain 8 Outside Play Area 38 minutes	

MI Mushtifaq
RN Rabila
SA Shazia
C Christopher
M Michael
P Paul
M Melanie

KEY: ○ Girl □ Boy △ Monolingual Teacher ▲ Bilingual Teacher ■ Informant

Figure 3 A Social Network Analysis for Ishtiaq's First Day in Box Hill Nursery

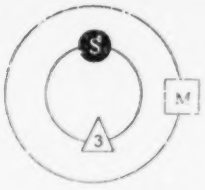
Activity 1	Domain 1 Children's Cloakroom 2 minutes		SM Sofees SH Sabia RN Rabila
Activity 2	Domain 7 Dry Sand 7 minutes		
Activity 3	Domain 28 Corridor		
Activity 4	Domain 18 Pretend Kitchen 2 minutes		
Activity 5	Domain 13 Clay 2 minutes		
Activity 6	Domain 11 Junk Table 5 minutes		YA Yassair
Activity 7	Domain 22 Train Set 4 minutes		

(continued)

KEY: ○ Girl □ Boy △ Monolingual Teacher ▲ Bilingual Teacher ● Informant

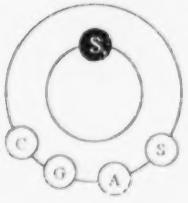
Figure 5 A Social Network Analysis for Shamaila's First Day

Activity 8
Domain 15
Washbasins
2 minutes



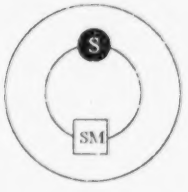
M Michael

Activity 9
Domain 24
Drawing Table
9 minutes

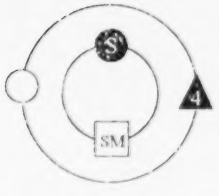


C Clare
G Gemma
A Amy
S Susan

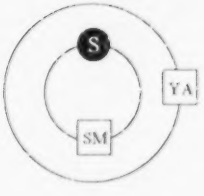
Activity 10
Domain 7
Dry Sand
4 minutes



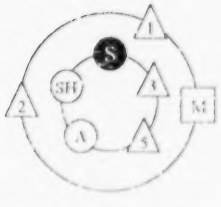
Activity 11
Domain 1
Children's Cloakroom



Activity 12
Domain 15
Washbasins

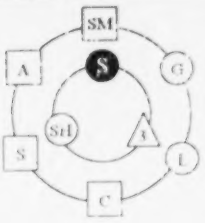
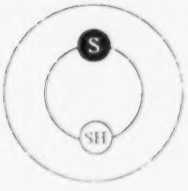
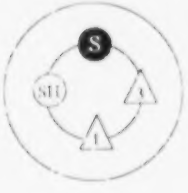
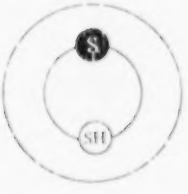


Activity 13
Domain 14
Water Area
4 minutes



KEY ○ Girl □ Boy △ Monolingual Teacher ▲ Bilingual Teacher Informant

Figure 5 (cont) A Social Network Analysis for Shamaila's First Day

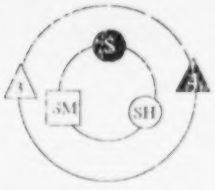
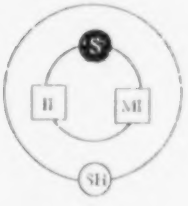
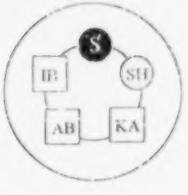
Activity 1	Domain 8 Outside Play Area 9 minutes	
Activity 2	Domain 11 Junk Table 5 minutes	
Activity 3	Domain 9 Paints 5 minutes	
Activity 4	Domain 11 Junk Table 5 minutes	
Activity 5	Domain 28 Corridor	
Activity 6	Domain 9 Paints 9 minutes	
Activity 7	Domain 15 Washbasins	

(continued)

SM Sofees
SH Sabra
A Alan
S Stuart
C Christopher

KEY: Girl, Boy, Monolingual Teacher, Bilingual Teacher, Informant

Figure 6 A Social Network Analysis for Shamaila at the end of the first term

Activity 8	Domain 22/23 Christmas Tree 3 minutes	
Activity 9	Domain 18 Kitchen 4 minutes	
Activity 10	Domain 14 Water Area 3 minutes	
Activity 11	Domain 19 Food	
Activity 12	Domain 22/23 Christmas Tree 30 minutes	

II Ishtiaq
MI Mushtifaq

IB Imran
AB Azia
KA Kamran

KEY: ○ Girl □ Boy △ Monolingual Teacher ▲ Bilingual Teacher ✱ Informant

Figure 6 (cont) A Social Network Analysis for Shamaila
at the end of the first term in Box Hill Nursery

Informant	Girls in Dense Netwerk	Boys in Dense Network	Preferred Participants
Imran (IB)	Azia (AB) Shamaila (Sh)	Kamran (KH) Yassair (YA)	Azia (AB) Kamran (KH) Yassair (YA)
Ishtiaq (II)	Shazia (SA)	Mushtifaq (MI)	Mushtifaq (MI)
Kamran (KH)		Imran (IB)	Imran (IB)
Rabila (RN)	Sabia (ZH)		Sabia (ZH)
Sabia (ZH)	Sumera (SK)	Sofees (SM) Sufyaan (SA)	Sumera (SK)
Shamaila (Sh)	Sabia (ZH)	Sofees (SM) Sufyaan (SA)	Sabia (ZH) Sofees (SM)
Shazad (SH)	Sumera (SK) Rabila (RN)	Kamran (KH) Yassair (YA)	Rabila (RN) Yassair (YA)
Sofees (SM)	Shamaila (Sh)	Yassair (YA)	Shamaila (Sh) Yassair (YA)

Figure 7 A Table of Preferred Participants or Emerging Friendship Networks